AMENDMENTS TO THE CLAIMS

1. (Cancelled)

2. (Cancelled)

3. (Cancelled)

4. (Cancelled)

5. (Currently Amended) A method for fabricating a III-V compound semiconductor comprising a step of successively epitaxially growing thin films to fabricate a III-V Group compound semiconductor composed of a buffer layer having a multilayer structure of thin-filmed layers of compositions represented by $Al_{xi}Ga_{1-xi}As$ ($0 \leq xi < 1$, $i = 1, 2, \ldots n$) formed on a **flat** GaAs substrate and an upper multilayer structure of layers of compositions represented by $Al_{yj}Ga_{1-yj}As$ ($0 \leq yj < 1$, $j = 1, 2, \ldots$) formed on the buffer layer, wherein the Al content of an uppermost thin-film layer among the buffer layers is lower than the Al content of an adjacent upper multilayer structure formed on the uppermost thin-film layer in which step a growth rate of the adjacent layer is made slower than a growth rate of the uppermost layer.

6. (Currently Amended) ~~A~~ **The** method for fabricating a III-V Group compound semiconductor as claimed in claim 5, wherein the buffer layer is formed so that the Al contents of its thin-film layers increase stepwise from the GaAs substrate toward the upper multilayer structure.

7. (Currently Amended) A method for fabricating a III-V Group compound semiconductor comprising a step of **growing** on a flat GaAs substrate by epitaxial growth an $Al_{yj}Ga_{1-yj}As$ ~~multiplayer~~ **multilayer** structure ($0 \leq yj < 1$, $j = 1,2,...$) including a structure obtained by overlaying on a first layer of lower Al component content a second layer of higher Al component content, in which step the first layer is epitaxially grown first and the second layer is then epitaxially grown on the first layer at slower epitaxial growth rate than that used to epitaxially grow the first layer.

8. (New) A method for fabricating a III-V Group compound semiconductor comprising:

forming on a flat GaAs substrate by epitaxial growth an $Al_xGa_{1-x}As$ multilayer structure ($0 \leq x < 1$) including a structure obtained by overlaying on a first layer of lower Al content a second layer of higher Al content, and the second layer is epitaxially grown on the first layer at a slower epitaxial growth rate than that used to epitaxially grow the first layer.

9. (New) The method for fabricating a III-V Group compound semiconductor as claimed in claim 8, wherein the first layer is a buffer layer formed on the GaAs substrate.

10. (New) The method for fabricating a III-V Group compound semiconductor as claimed in claim 8, wherein the first layer is a GaAs buffer layer formed on the GaAs substrate.

11. (New) The method for fabricating a III-V Group compound semiconductor as claimed in claim 8, further comprising a step of forming on the second layer by epitaxial growth at least an $Al_{yj}Ga_{1-yj}As$ layer ($0 \leq yj < 1$, $j = 1, 2, \ldots$).

12. (New) The method for fabricating a III-V Group compound semiconductor as claimed in claim 8, wherein the $Al_xGa_{1-x}As$ multilayer structure includes an $Al_{0.15}\ Ga_{0.85}$ As layer and an $Al_{0.4}Ga_{0.6}As$ layer.

13. (New) The method for fabricating a III-V Group compound semiconductor as claimed in claim 8, wherein a GaAs layer is formed over the $Al_xGa_{1-x}As$ multilayer structure.

14. (New) The method for fabricating a III-V Group compound semiconductor as claimed in claim 8, wherein the $Al_xGa_{1-x}As$ multilayer structure includes a GaAs layer over

which is an $Al_{0.4}Ga_{0.6}$ As layer, over which is an $Al_{0.15}$ $Ga_{0.85}$ As layer, over which is an $Al_{0.4}Ga_{0.6}$ As layer, over which is formed a GaAs layer.